An Inaugural Dissertation

on

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Hydrophobia.

An affection for which Therapeutics has done so little in so long a time, again in the cycle of human investigation calls for agitation of the medical mind in its behalf.

The liability of all to its yearly visits makes the necessity of guarding against its inveterate attacks a premise for our present study and future action.

Hydrophobia - A peculiar disease resulting from the entrance into the system of the poison of a rabid animal; - generally through a wound, the bite of the animal. - Wood.

Hydrophobia literally signifies a dread of water; and consequently ought to be applied to one of the symptoms of rabies, rather than the disease itself. - Dunglison.

It is then a disease of the nervous system attended with fever and general disorder of all the functions. It belongs to man alone, and with him is original and final; but has for its antecedent an inoculable virus engendered and transmitted by the lower animals, in which may be found many of the same though not so constant symptoms as we descry in man.

In tracing out the history of this disease we find it necessary first to take up the original disorder,— rabies canina, as found in the animal; following this will be given a description of the subsequent affection,— Hydrophobia, as above defined.

Rabies is usually preceded by a dull heavy look; the color of the eyes changing to green and yellowish hues. The dog is uneasy in his position; snaps at whatever presents; has a suspicious and cowardly look; vomits often: his tongue, at first a bright carnation, changes to a leaden color and falls pendant; a thick tenacious fluid flows profusely from the mouth.

Refusing food and drink he becomes more uneasy, running about snapping at strange animals that may be in his way; next he snaps at those domesticated with himself, later at people, and finally at his master. So long as he obeys his keeper's call, it is in the most cowering manner. This may continue three or four days. As the disease advances his breathing becomes labored and his eyes inflamed; he runs incessantly snapping at everything in his way, uttering a cry or yelp at each attack. Soon symptoms of paralysis show themselves, and only then does his tail drop between his legs and his jaw fall; his legs totter and he falls exhausted by the road-side - in some cases these symptoms of prostration are followed by convulsions from which he sooner or later arises to start again at full speed. Thus his existence is soon terminated; the animal often surviving but two of these paroxysms to die in the third. Each successive attack is more severe than the one

preceding.

This Stage seldom lasts longer than thirty hours.

Among animals the dog and cat kind stand foremost in the generation and propagation of raibes. In their wild and ferocious state it is said to be more severe, and its inoculation more certain.

The question of the spontaneous origin of this disease in some quadrupeds has been the subject of much speculation and controversy.

Besides violence to the sexual system, and sudden great changes of temperature, it is supposed that the disease may be produced by famishing, starving and worrying the animal. It has also been thought that the want of fresh meat, and feeding on decayed animal food were sources of this disorder as well as the excessive heat of summer.

The latter idea, the most common, is refuted by the fact that in the hottest weather we have less

of the disease than during the months of may and september, when the weather is cooler. Again, we are told that the disease is unknown in the West Indies, South America, Egypt and Syria. Also that at the Cape of Good Hope, where the heat is very great, the dogs of the Kaffers, in great numbers, are fed exclusively on flesh in a highly putrid condition and yet never go mad.

We have seen that during the spring and autumn months when rabies is most common, it may be engendered in a cat or dog by alternations of temperature;-heat and cold, applied to the sides and back of the head. So faithful a likeness of this disorder has thus been produced as to leave on our mind no room for doubt of the question;-either of its genuineness or spontaneity. Again, in the case of cats in "rutting time", it will be observed that if the female be kept apart from the male, and confined as is often the case on board

of vessels; she will generally die of rage, at or before the end of six weeks, unless these restraints be removed. The same may be said of various animals kept on exhibition in menageries, etc.

In the two cases above stated are embraced the essential conditions of some hidden cause of the disorder, possibly the cause itself, viz: alternation of temperature and a peculiar organism of the blood, consequent on long continued sexual heats. The times of year already stated favor a development of either condition.

Hydrophobia The sequelae of rabies is first noticed in the patient, after being bit, generally at some time between the end of the first and the sixth week. During this time the wound may have healed, in which case the cicatrix often presents a scarlet tint. Should the wound not be healed when the initiatory symptoms set in, it will present

a livid spongy appearance and discharge a thin ichorous humor. It is frequently the case after the wound has healed that the cicatrix breaks open again and an itching pain, sometimes very acute, is felt to shoot from the seat of the wound to the throat, neck and trunk. The bitten limb frequently feels numb, or has an aching tingling pain, as if it had gone to sleep; sometimes burning and at other times a coldness.

General symptoms of nervous disturbance follow these local symptoms. He becomes dejected, morose, melancholly and restless; has wandering pains, excessive apprehensions, sudden startings and spasms; disturbed sleep; desires to be alone; dreams frightful dreams of dogs from which he starts; or from an over-sensitiveness of all the senses, he may be sleepless.

These symptoms remaining from a few hours

to five or six days are interrupted by frequent or long continued seasons of rest from pain and anguish. The patient experiences some difficulty in the deglutition of liquids; he has great sensitiveness to draughts of air and cold,- alternate heat and chilliness.

Here the attack may be stated to have fairly commenced. Nervous disturbances increase with nausea and vomiting of bile, obscuration of vision, small pulse and pale urine; the latter passed with great urgence,- emitted drop by drop. Breathing becomes painful. A sensation of stricture and oppression is felt in the chest with frequent sighing. The difficulty of swallowing rapidly increases and the mere thought or sight of liquid throws him into paroxysms of spasmodic constriction of the larynx and fauces. The most painful and frightful convulsions are brought on by hearing liquids poured

from one vessel to another; by the sight of a mirror, fire, burning candle, any shining object, — in fact by anything that brings to his mind the thought of a liquid or his past trouble in its deglutition.

Another characteristic feature in the disease is that sort of frantic rapidity and vehemence with which the patient spits out to the last drop a viscid frothy saliva, which is constantly being secreted, lest a particle of it should find its way to the throat and have to be swallowed.

At this juncture lightning-like shocks pierce his neck, spine and epigastrium seeming to shatter his frame; amid shrieks and screams of agony he begs his attendants to terminate his sufferings by death. His strength is here suddenly increased to an alarming extent, calling into requisition the greatest efforts on the part of his

attendants to control him. Writhing in their grasp he lies a human wreck, seething and hissing in hot madness; biting, spitting and tearing the bed clothes; ever and anon rending the air with the most direful howls and shrieks; his blood-shot eyes rolling wildly as if to start from their sockets, and frightful terror depicted on his distorted countenance.

This attack usually lasts a quarter or half an hour, till from exhaustion he sinks into a state of gloomy listless dejection from which he is aroused to enact again the same scene.

During the intervals his strength is quite exhausted; he is generally concious and warns his attendants of the danger they incur when exposed to his rage. He feels the spells coming on and begs that he be made secure from damage to himself and others during their continuance.

These paroxysms become more frequent

and powerful, until from sheer exhaustion or convulsive suffocation he is relieved by death which occurs generally at the end of forty-eight hours; though sometimes it is warded off until the seventh day.

The patients tongue is usually furred, the papillae much elevated; pulse from 130 to 150 - beats small, irregular. The last stage is frequently marked by a cold skin covered with a viscid, offensive sweat.

Hydrophobia is sometimes remittent in its course, seeming to give great hopes of the patients recovery. During the apyrexia he is not unfrequently free from all pain, able to swallow fluids and solids with apparent ease, and shows such marks of convalescence as to dissuade even his physician from apprehensions; but he, from this

recession, soon falls into a sleep from which he awakens only to die.

Of the pathological character of the disease but little can be said that is definite, since pathologists find so few lesions in common. The blood is found to be dark and decays rapidly. There is generally a serous effusion covering the brain and a reddening of the pia-mater. Most of the large arteries and sometimes the engorged lung presents an emphysematous appearance. The glottis is swollen and inflamed; the viscera generally very acid.

Hydrophobia, like a great many other diseases of nervous origin, even though they prove fatal, shows no pathological structural changes or lesions of the nervous substance. True these lesions are sometimes found but they are inconstant and in no wise dependent.

We know that the poison contained in the saliva of the rabid dog, imparted by the bite, is productive of Hydrophobia after a certain stage of incubation: that it is effected in any other manner is yet a mooted point. No instances are recorded in which the virus has been absorbed through the sound cuticle; while on the other hand many have been adduced to prove the permeability of the mucous membrane by this strange fluid. It is asserted that persons have been attacked with Hydrophobia in consequence of wiping their mouths with linen which had been saturated with the saliva of a mad dog. A case is mentioned in which the disease originated from an attempt to untie, by the teeth, a knot in a cord which was used to fasten a rabid dog. Another, a young woman on mending a rent in one of her garments, torn by the teeth of

a mad dog, bit off the thread and soon after, without other exposure, died of Hydrophobia. Horses are said to have contracted the disease by eating from the manger in which the rabid animal had lain.

The proportion of Hydrophobic cases is small when compared with the number bitten. John Hunter mentions an instance of twenty persons bitten by a rabid dog: of these but one died. The proportionate number of those bitten by the wolf is greater: being a little more than one half. This may be attributed to the manner of the wolf's attack, - snapping at naked parts of the person as the face and hands; whereas the saliva of the dog may never enter the wound, but remain upon the clothing.

Of many experiments we have but one - that of M. M. Magendie and Berschet, that goes to show that the saliva of man will produce a return of the disease to the animal:-

Two healthy dogs were inoculated with the saliva of a Hydrophobic patient; one of them was seized with rabies and imparted it to other dogs by biting them; the other escaped the malady. Now this in reality proves nothing in the argument of cause and effect. as some former inoculation by his own species may have developed itself in the dog at this time, or it may have been the result of spontaneous madness.

We have seen that the <u>same disease</u> is not transferable from the lower animals to man, and sufficient proof has not been made that it is returned from him to these animals: we feel safe therefore, in saying that after the intrusion of this disorder into human-kind it has spent its force, wholly giving up its power to attack like or unlike organisms, - man or beast.

Besides the opinions of various observers

this argument obtains some weight from analo-
-gy. Many diseases belonging to the
ass and its kind are transferred to horses
when brought in contact - yet the horse can
not return it or give a similar disorder
to other horses.

It is of the most particular import-
-ance and should be well understood by
all, that Hydrophobia is not contagious;
since its moral effect will be invaluable
to the timid nurse and attendants who
must otherwise live in constant fear of an
imaginary evil.

Most of our leading authors look upon
Hydrophobia as incurable, but this need
not deter the homeopathic practitioner
from administering any remedy whose
pathogenetic action bears on its face the
characteristics of the derangement.

Many of the old school for want of

a more heroic plan of treatment than purgatives afford, strenuously advocate the use of the knife: "Excise the wounded part immediately that the poison may not be absorbed × × cupping, leech and scarify!"

Now besides the impracticability of this mode of treatment, any modern physiologist will see at a glance that such a course is worse than useless. The blood circulates through the arteries at the rate of about twelve inches per second, and it would be recalled from the finger-ends to the heart again in the space of three seconds, which time would require a very speedy operation of exsection of the shoulder joint to save a patient bitten in the finger, even if the surgeon stood ready with cutlin in hand at the time – a thing very improbable.

With this school, mercury was once considered a curative agent; but Dr. Pearson,

a celebrated physician of Birmingham, failing to prove its action "on sound therapeutic principles" (antipathic!) it was denounced. "For," said he, "a salivation is a constant symptom of the disease, so that if it were curable by a flow of spittle it would cure itself." This assures you of his ignorance of the true law of cure, - homoeopathy.

The Indians pretend to cure the disease by dusting the wound with common table-salt and subjecting the bitten part to the heat of the fire.

Dr. Hering, of Philadelphia, advises the application of distant heat to the recent wound until febrile shudderings set in; continuing this practice three or four times per day till the wound is healed without leaving a colored cicatrix.

We have already seen, as was stated of the Kaffir's dogs, that great heat is a

prophylactic in the primary disease — may it not be curative, even in the secondary?

Hahnemann says one or two doses of Belladonna will cure it.

Belladonna may be given when there is frequent desire to drink though the patient reject every drink offered him; burning sensation of the throat with great dryness; red, bloated face and glistening eyes; excessive thirst with suffocation on attempting to swallow liquids — not continuous; ineffectual attempt to sleep; anxious breathing; fear, alternating with desire to escape from his attendants, or to spit and snap at them; constant restlessness; jactitation of single muscles, particularly the facial muscles. The sound of running water and the sight of shining objects is exceedingly painful to him.

Hyoscyamus when the patient has great dryness, burning heat, stinging and a

suffocative constriction of the throat; is unable to swallow liquids, and when he attempts it he suffers soon after from convulsions that deprive him of his senses. He is constantly delirious even when there is no paroxysm, or he is taciturn and fearful. His face is red and bloated. There is some sleep but it is disturbed by anxious dreams; and on waking, his mind is filled with lewd fancies with desire to go naked.

Stramonium is indicated where there is great loquacity with gesticulations, dancing singing and laughing. The patient has no sleep, but topses about his bed uttering hoarse screams; his pupils are dilated and he stares, and shrinks from any approach. Bright objects throw him into violent convulsions (of a tonic nature) during which he is so frantic that he must be tied.

Without going into further details, we

will merely mention a few remedies that may be studied with advantage: Cantharides. Euphorbia. pul. Mercurius. Scutillaria and Spiraea ulm.

Before closing we will say that Hydrophobin and Lachesis from their many symptoms so like the disease, must act charmingly and are always to be remembered. Their inestimable value is hinted at in the following:-

In the Arch. 15.1.66. Dr. Hering says that his former proposition to give Lachesis in Hydrophobia has met with success; and as invaluable as Hydrophobin is, in the beginning and end of the disease, so is Lachesis superior to all other remedies in the highest stage of its development". The verification of the above we see promptly exemplified in Rückerts Clinical Observations. Vol. 4. pg. 624.